Joint Tactical Radio System

Volume, Distance and Speed

It's no secret that the "King of Battle" has determined the outcome of many battles from its earliest days of massive bombardments to today's precision smart munitions. One aspect of FA operations has remained constant: Cannoneers have to know where the enemy is and be able to communicate with the guns fast enough to put rounds on target, on time. The joint tactical radio system (JTRS), which will begin fielding in 2002, will allow today's Redlegs to communicate huge amounts of digital data over greater distances at "sensor-to-shooter" speeds.

This future radio system will give the joint task force (JTF) commander a seamless, dynamic communications network for his battlespace with the speed and automatic routing to provide real-and near-real-time voice, video and data simultaneously for theater-wide situational awareness. JTRS will maximize the wideband network waveform to provide huge amounts of bandwidth and incorporate the Tactical Internet. It will be interoperable with civilian, Army, joint and multinational legacy communications systems.

Today's units can send orders electronically. They can interoperate with joint and multinational forces. Units can tap civilian networks. And they can access a real-time video capability. But our units can't do all these from one communications system. For these capabilities, the Army must rely on multiple systems: the single-channel ground and airborne radio system (SINCGARS), the enhanced position location reporting system (EPLRS), the near-term digital radio (NTDR), mobile subscriber equipment (MSE) and satellite communications (SATCOM). JTRS will satisfy all these requirements in one system.

Operational Concept. JTRS will be a wireless, secure, multi-band/multi-mode digital radio. It is being scaled for use in all domains: airborne, ground, mobile, handheld, fixed station, maritime, civilian and personal. It's being designed as an open system of architecture based on a common communications system architecture—interoperable with legacy communications systems and capable of accepting future technology insertions.

When the JTRS is ready for fielding, it initially will be fielded to battlefield operating systems (BOS) that need multiple radios, such as the fire support BOS. The FA will have JTRS that are configured and programmed for simultaneous operations on multiple bands and modes across multiple networks while automatically routing within and between applicable local and Internet networks.

The radio will have plug-and-play versatility in field-configurable modular hardware that operates on the move. It will include embedded position location and automatic situational awareness feeds to and from networks.

JTRS Development. The Joint Program Office (JPO) is taking an aggressive approach to developing and procuring this radio system. On 28 June, the JPO announced the Modular Software Radio Consortium (Raytheon) System Architecture had been selected for JTRS. Next, the consortium will develop prototypes and demonstrate the architecture and its interoperability. A second consortium will build the same architecture and develop some or all of the optional waveforms. Then the two will swap waveforms and related technologies to validate the compatibility and openness of the selected architecture.

The first consortium must provide the following eight wave forms: HF Automatic Link Establishment (ALE), VHF FM, VHF Public Service, UHF Demand Assigned Multiple Access/Demand Assigned Single Access (DAMA/DASA), VHF for Air Traffic Control (ATC), VHF FM, UHF Have-Quick I and II and a vendor proposed wideband. The JTRS will focus on the vendor's proposed wideband networking waveform. The second consortium must provide some or all of the following optional waveforms: SINCGARS, EPLRS, Link 16, NTDR and Internet Control (INC).

With this fast-paced contracting and procurement method, the JPO hopes to have an improved tactical operations center (TOC)-to-TOC radio system for fielding, beginning in FY02. The first vehicle and manpack versions of these radios should be fielded to the 82d Airborne Division, Fort Bragg, North Carolina, in FY05. The JTRS will provide the future JTF commander a mobile, dynamically reconfigurable, theater-wide information grid with sufficient reliability, capacity, interoperability and security to fight his battlespace. He will be able to tailor the system to provide the support networks he needs for time-critical missions.

For more information about the JTRS, go to the JTRS JPO home page at www.jtrs.sarda.army.mil or the Training and Doctrine Command (TRADOC) System Manager-Tactical Radios (TSM-TR) home page at www.gordon.army.mil/tsmtr.

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